CO_2 COOLING SYSTEM

ABSTRACT OF THE DISCLOSURE

A cooling system including an evaporator, a suction line, a two stage compressor, a gas cooler and a capillary tube. The suction line receives gaseous or two phase refrigerant from the evaporator, the compressor receives the gaseous or two phase refrigerant from the suction line, and the gas cooler cools compressed refrigerant discharged from the compressor. The capillary tube carries refrigerant from the gas cooler to the evaporator, and the suction line may include two straight portions with two portions of the capillary tube helically wound therearound, with a bypass valve around the capillary tube, and an accumulator between the suction line portions. An inter-cooler is between stages of the compressor, and a pan collects water condensate from the air side of the evaporator, and the refrigerant tube carries cooled refrigerant from the gas cooler through the pan. A controller selectively turns the compressor on and off based on temperature or pressure sensed by a sensor.